

(19) World Intellectual Property Organization
International Bureau



Rec' OCT/PTO

517,469
08 DEC 2004

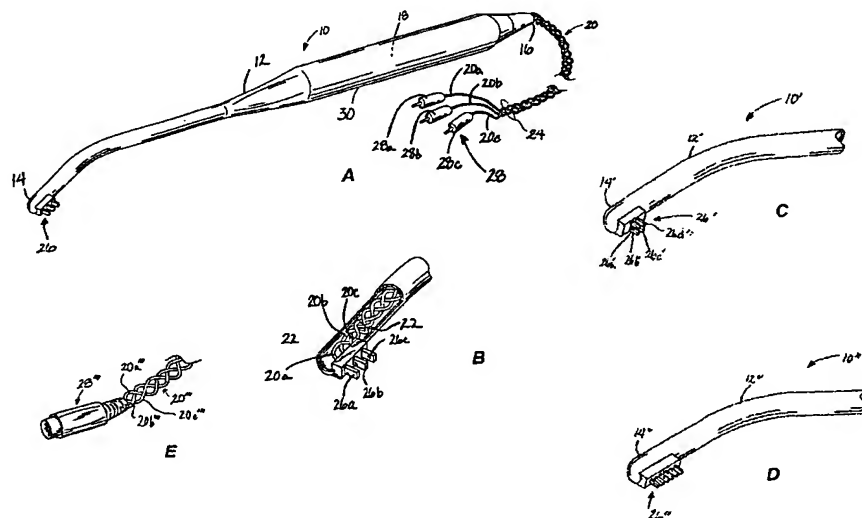
(43) International Publication Date
24 December 2003 (24.12.2003)

PCT

(10) International Publication Number
WO 03/105662 A2

- (51) International Patent Classification⁷: **A61B**
- (21) International Application Number: PCT/US03/18464
- (22) International Filing Date: 16 June 2003 (16.06.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/389,016 14 June 2002 (14.06.2002) US
- (71) Applicant: **KRESS, David, C.** [US/US]; 9338 Spindle Top Court, Franklin, WI 53132 (US).
- (71) Applicants and
(72) Inventors: **KRUM, David, P.** [US/US]; S80 W17784 Brennan Drive, Muskego, WI 53150 (US). **HARE, John, W.** [US/US]; 12364 River Road, Mequon, WI 53092 (US). **SRA, Jasbir** [US/US]; W305 N2963 Red Oak Court, Pewaukee, WI 53072 (US).
- (74) Agents: **FRENCHICK, Grady, J.** et al.; Michael Best & Friedrich LLP, One South Pinckney Street, P.O. Box 1806, Madison, WI 53701-1806 (US).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Declarations under Rule 4.17:**
— of inventorship (Rule 4.17(iv)) for US only
— of inventorship (Rule 4.17(iv)) for US only
- Published:**
— without international search report and to be republished upon receipt of that report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: TRANSMURALITY ASSESSMENT APPARATUS AND METHODS



(57) Abstract: A transmural evaluation apparatus or probe, method for manufacturing a transmural evaluation apparatus or probe, and method for assessing the transmural of a lesion. In one aspect, the transmural evaluation apparatus or probe generally includes a handheld elongate housing, wiring having a first end and a second end, at least one tissue contact electrically coupled to the wiring first end, and a terminal connector electrically coupled to the wiring second end. In another aspect, the method for assessing the transmural of a lesion generally includes establishing a first electrogram of the first region of tissue, ablating a second region of tissue to form an ablated lesion, establishing a second electrogram of the first region of tissue, and comparing the first and second electrogram to assess transmural of the ablated lesion.

WO 03/105662 A2

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
24 December 2003 (24.12.2003)

PCT

(10) International Publication Number
WO 2003/105662 A3

(51) International Patent Classification⁷: **A61F 7/00**

(21) International Application Number:
PCT/US2003/018464

(22) International Filing Date: 16 June 2003 (16.06.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/389,016 14 June 2002 (14.06.2002) US

(71) Applicant: **KRESS, David, C.** [US/US]; 9338 Spindle
Top Court, Franklin, WI 53132 (US).

(71) Applicants and

(72) Inventors: **KRUM, David, P.** [US/US]; S80 W17784
Brennan Drive, Muskego, WI 53150 (US). **HARE, John,
W.** [US/US]; 12364 River Road, Mequon, WI 53092 (US).
SRA, Jasbir [US/US]; W305 N2963 Red Oak Court,
Pewaukee, WI 53072 (US).

(74) Agents: **FRENCHICK, Grady, J. et al.**; Michael Best &
Friedrich LLP, One South Pinckney Street, P.O. Box 1806,
Madison, WI 53701-1806 (US).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,

CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE,
SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ,
VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,
SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM,
GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- of inventorship (Rule 4.17(iv)) for US only
- of inventorship (Rule 4.17(iv)) for US only

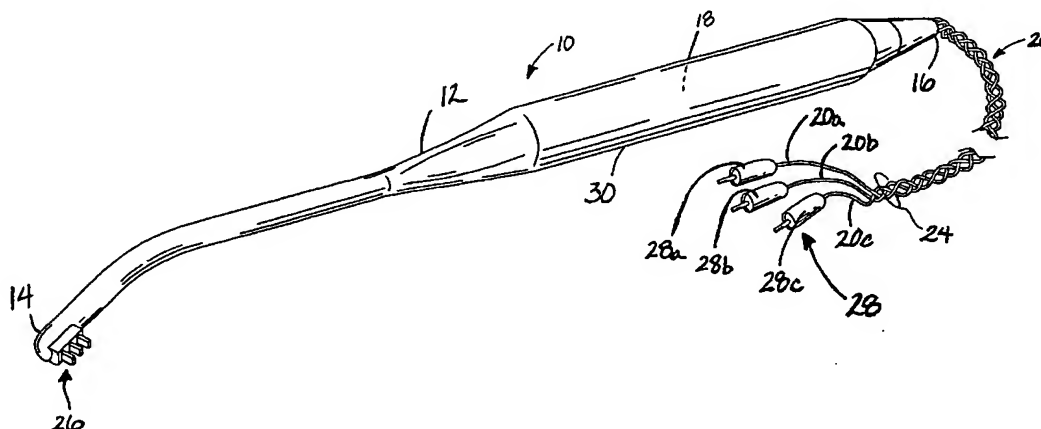
Published:

- with international search report
- before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments

(88) Date of publication of the international search report:
25 March 2004

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: **TRANSMURALITY ASSESSMENT APPARATUS AND METHODS**



(57) Abstract: A transmural evaluation apparatus or probe, method for manufacturing a transmural evaluation apparatus of probe, and method for assessing the transmural of a lesion. In one aspect, the transmural evaluation apparatus or probe generally includes a handheld elongate housing (30), wiring (20) having a first end and a second end, at least one tissue contact (26) electrically coupled to the wiring first end, and a terminal connector (28) electrically coupled to the wiring second end. In another aspect, the method for assessing the transmural of a lesion generally includes establishing a first electrogram of the first region of tissue, ablating a second region of tissue to form an ablated lesion, establishing a second electrogram of the first region of tissue, and comparing the first and second electrograms to assess transmural of the ablated lesion.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/18464

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : A61F 7/00

US CL : 607/98

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 607/1-156

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A,E	US 6,584,360 B2 (FRANCISCHELLI et al) 24 June 2003 (24.06.2003), see entire document.	1-32
Y,E	US 2003/0208252 A1 (O'BOYLE et al) 06 November 2003 (06.11.2003), see entire document.	1-12,23-32
A,E	US 2003/0220639 A1 (CHAPELON et al) 27 November 2003 (27.11.2003), see entire document.	1-32

☐

Further documents are listed in the continuation of Box C.

☐

See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T"

later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X"

document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y"

document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&"

document member of the same patent family

Date of the actual completion of the international search

03 December 2003 (03.12.2003)

Date of mailing of the international search report

21 JAN 2004

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Facsimile No. (703)305-3230

Authorized officer

Scott M. Getzow

Telephone No. (703) 308-0858